REMARKS

The Amendments

Claim 3's recitation of a conjugated polymer in the emissive layer has been added to claim independent 1. The remaining independent claims 13, 27 and 29, have been similarly amended.

Dependent claims 3, 4, 31, 33, 34, 35 and 36 have been rendered redundant or inconsistent by the amendments to claims 1, 13, 27 and 29. These claims have been either canceled or amended to conform to the independent claims they depend from.

Claim 9 has been amended to correct an error – "phosphorescent" was recited where "fluorescent" was intended as evidenced by the wording of claim 1 from which claim 9 depends.

Nonelected claims 39-43 are now canceled to eliminate this formality from standing in the way of this application's movement to allowance.

The Invention

Before discussing the two rejections made in the Office Action under reply it is in order to briefly review the invention now being claimed.

As set forth in the background section of this application, organic light emitting diodes, including those having a layer of an organic emissive material, are well known. So is their laminate structure of transparent electrode, hole injecting layer, light emitting (emissive) layer and backside electrode on a substrate.

The present invention as defined in all of the claims now under consideration relates to a special emissive layer for use in such devices. This single emissive layer includes one or more conjugated organic polymers which produce fluorescent emissions together with one or more phosphorescent emitters which produce phosphorescent emissions with both emissions occurring in a single emissive region, that is in the single emissive layer.

As demonstrated in the examples of the present application, by selecting the phosphorescent emitters and fluorescent emitters appropriately, white light can be obtained from a single layer and a single device, something typically only achieved with multiple separate devices in the organic light-emitting diodes of the past.

The Rejections

All claims last submitted were rejected over Mishima (Pub 2002/0122819). This rejection as it might be sought to be applied to the amended claims now presented is respectfully traversed.

As explained best by Mishima himself in paragraphs [0010] through [0014]. Mishima is directed to methods for producing light emitting devices. These methods focus on controlling the device's exposure to oxygen and moisture during fabrication.

As further described by Mishima in paragraphs [0004] through [0014], Mishima considers that singlet based photoemission, that is "fluorescent" emission, is inefficient and that triplett-based photoemission; that is "phosphorescent" emission, is to be preferred. He suggests at paragraph [0010] that the processing conditions needed to make "singlet" emission devices are not effective for making the "triplett" devices he considers superior, hence his new methods for producing.

It is not seen that Mishima seeks to describe or produce new light-emitting devices, rather in paragraphs [0015] to [0062], Mishima seems to be cataloging as many as possible of the materials described in the art for making the various layers – e.g. (A) substrate, (B+C) electrodes), (D) light-emitting layer, (E) electron-transporting layer, etc.

Within the lists of materials provided in Mishima one can find the materials noted in paragraphs 3 of the Office Action. However, in all cases Mishima speaks of these materials soley as "host" materials for phosphorescent species. The phosphorescent materials provide the "triplett" illumination that Mishima calls for and to which Mishima's improved fabrication process is directed.

It is respectfully suggested that Mishima does not describe the present invention that one can advantageously obtain "singlet" and "triplett" light emission, and in fact multiple "singlet" emission and multiple "triplett" emissions from a single emissive layer based on conjugated polymers and phosphorescent emitters as is now sought to be claimed herein.

There is no teaching in Mishima to select the materials from their list which will provide that desirable result.

In addition, no teaching is seen in Mishima that these multiple emissions from a single layer could provide white light from a single device as set forth in claims 13-26.

Nor is there a teaching to select the fluorescent emitters to have higher energy than the phosphorescent emitters in the single layer as set forth in claims 2, 13-26, 29, 30, 32 and 36-38.

Accordingly, it is respectfully submitted that all the presently pending claims are patentable over Mishima.

Several of the claims last presented were rejected over Thompson et al. (U.S. Patent No. 6,830,828). Others of the claims last presented, which recited the use of a "conjugated" polymer in the single emissive layer, were not so rejected. To expedite the passage to allowance all claims now presented recite the presence of "conjugated" polymers in the emissive layer.

It is respectfully submitted that this obviates the rejection previously made.

Submission of Prior Art

Applicants' attorney notes with distress that prior art noted in the application inadvertently has not been supplied to the Examiner. This art is being submitted on an expedited basis and should arrive on the Examiner's desk simultaneously with (or maybe even before) this Amendment. If this does not happen, please telephone the undersigned.

The Examiner's Phone Call

Thank you so much for checking on this call, your call was much appreciated.

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0872.

Respectfully submitted,

Date: September 7, 2006

By ____________________

William H. Benz
Attorney for Applicant
Registration No. 25,952

FOLEY & LARDNER LLP
Customer Number: 38706
Telephone: (650) 251-1124
Facsimile: (650) 856-3710